Illinois
Department of
Natural Resources
One Natural Resources Way • Springfield, Illinois 62702-1271
http://dnr.state.il.us
Rod R. Blagojevich, Governor

May 10, 2005

Mr. Rex Petersen
Illinois Department of Natural Resources
Region IV Office
4521 Alton Commerce Parkway
Alton, Illinois 62002

RE: *IDNR/IDOT Sand Ridge Road West Project - Mason County, Illinois*
Threatened and Endangered Species Issues - Incidental Take Authorization

Dear Rex:

Pursuant to the Illinois Endangered Species Protection Act (520 ILCS 10/5.5) the IDNR/IDOT authorization (improvements to Sand Ridge Road West project) for the incidental take of the State Listed Regal fritillary (*Speyeria idalia*), Ottoe skipper (*Hesperia ottoe*), Cobweb skipper (*Hesperia metea*), Illinois mud turtle (*Kinosternon flavescens*), Illinois chorus frog (*Pseudacris streckeri*), and Western hognose snake (*Heterodon nasicus*) in Mason County, Illinois is hereby granted, subject to the terms and conditions described in the attached Authorization and Implementing Agreement. The Illinois Department of Natural Resources (Department) has determined that this authorized take is incidental to the construction improvements to Sand Ridge Road West in Mason County, Illinois.

Please have an authorized Department/OLM Official(s) sign the last page of both copies of the Authorization and Implementing Agreement and return **both** copies to my attention. Upon receipt, I will have the agreements signed and return one (1) fully executed copy to you for your official records. This authorization shall be effective once signed by the Department's ORC Director.

Thank you for your cooperation and assistance during the incidental take preparation and review process. Please do not hesitate to contact our office at (217)782-6384 with any questions or comments you may have regarding this authorization agreement.

Sincerely,

Joseph A. Kath
Terrestrial Endangered Species Project Manager
IDNR-Office of Resource Conservation

Enclosures

Illinois
Department of
Natural Resources
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Authorization for Incidental Take and Implementing Agreement

Pursuant to the Illinois Endangered Species Protection Act (520 ILCS 10/5.5) the IDNR/IDOT authorization (improvements to Sand Ridge Road West project) for the incidental take of the State Listed Regal fritillary (*Speyeria idalia*), Ottoe skipper (*Hesperia ottoe*), Cobweb skipper (*Hesperia metea*), Illinois mud turtle (*Kinosternon flavescens*), Illinois chorus frog (*Pseudacris streckeri*), and Western hognose snake (*Heterodon nasicus*) in Mason County, Illinois (as described/shown in the conservation plan received by the Department on November 20, 2003 - revised January, 2005) is hereby granted, subject to the terms and conditions described in the attached Authorization and Implementing Agreement. The Illinois Department of Natural Resources (Department) has determined that this authorized take is incidental to the construction improvements to Sand Ridge Road West in Mason County, Illinois.

Procedural History

The Illinois Department of Natural Resources' Office of Resource Conservation (ORC) and Office of Land Management (OLM), in conjunction with the Illinois Department of Transportation, prepared a conservation plan as described by the Illinois Endangered Species Protection Act (520 ILCS 10/5.5). That plan and OLM's request for authorization for incidental take of: Regal fritillary (*Speyeria idalia*), Ottoe skipper (*Hesperia ottoe*), Cobweb skipper (*Hesperia metea*), Illinois mud turtle (*Kinosternon flavescens*), Illinois chorus frog (*Pseudacris streckeri*), and Western hognose snake (*Heterodon nasicus*) were received by the Illinois Department of Natural Resources Office of Resource Conservation on November 20, 2003. Public notice of request for authorization of incidental take of Regal fritillary (*Speyeria idalia*), Ottoe skipper (*Hesperia ottoe*), Cobweb skipper (*Hesperia metea*), Illinois mud turtle (*Kinosternon flavescens*), Illinois chorus frog (*Pseudacris streckeri*), and Western hognose snake (*Heterodon nasicus*) was published in the Edwardsville Intelligencer (Official State newspaper) and the Manito Review (Mason County) on March 15, March 22, and March 29, 2005. Public comments on IDNR/OLM's conservation plan were accepted by the Department until April 28, 2005. No comments were received by the public during the period of March 15 through April 28, 2005.

Compliance with the Endangered Species Protection Act

The Illinois Endangered Species Protection Act includes six criteria which must be met for the authorization of incidental take of an endangered or threatened species. These criteria and the Department's determination for each criteria are listed below.

1. The taking will not be the purpose of, but will only be incidental to, the carrying out of an otherwise lawful activity:

The stated and apparent purpose of this proposed action is to make improvements to Sand Ridge Road West. The existing Quiver Township road "Sand Ridge Road West" not only serves as the major east/west access road to Sand Ridge State Forest but also provides visitor access to various use areas within the Forest (e.g., office/visitor center, equestrian & vehicular campgrounds, hunter parking areas, etc). The existing road consists of an unimproved sand surface 18-22 feet wide and approximately 2.5 miles in length (western end) that becomes rutted and nearly impassable during certain periods of the year and an A-3 (oil & chip) surfaced road segment 20 feet wide and approximately .5 miles in length (eastern end). Improvements to Sand Ridge Road West will provide an all-weather surfaced roadway for site and visitor access, bring the road up to DNR road standards, and improve visitor safety in the event of an emergency or fire hazard. IDNR has the authority to improve the road under The "State Forest Act" 525 ILCS 40/5.

It is proposed to upgrade Sand Ridge Road West, from station 20+12.33 to station 185+50.12 (see Appendix 1 - Project Location Map) by installing drainage culverts, providing ditches, and placing 8" of aggregate base course with an A-3 (oil & chip) surface treatment. The project also consists of enlarging an existing borrow pit area within section 35, T22N, R7W that will be required for road construction purposes. These improvements could impact upon several State listed endangered and threatened species, hence a technical "taking" of these species. Such taking is not the purpose of the activities proposed by IDNR/OLM and IDOT, but is incidental to the carrying out of a lawful activity.

ALTERNATIVE ACTIONS CONSIDERED

No-action: The no-action alternative is defined as no change in the existing road. This alternative was not considered due the need for all-weather site and facility access for Forest visitors, and public health and safety concerns.

Design A: The Design A alternative is defined as the current road design with 4:1 fore slopes, 3:1 back slopes, 3 foot deep and 2 foot wide ditches with exotic grasses planted on the fore and back slopes. This alternative was not considered because of excess habitat and vegetation loss.

Design B *(Preferred Alternative)*: The Design B alternative is defined as the current road design with 3:1 fore slopes and back slopes, 1 foot deep and 2 foot wide ditches with native vegetation planted on the back-slope.

2. The parties to the conservation plan will, to the maximum extent practicable, minimize and mitigate the impact caused by the taking.

The conservation plan prepared by IDNR/OLM and IDNR/ORC, in conjunction with IDOT, and received by the Department on November 20, 2003 (revised January 2005) stated that measures have already been taken during the design phase of this project to minimize impacts to all species by reducing the size and slope of roadside ditches from 4:1 fore slopes, 3:1 back slopes, 3 foot deep and 2 foot wide ditches, to 3:1 fore slopes and back slopes, 1 foot deep and 2 foot wide ditches. This change should not impact drainage at the site and decreases the impact to existing

vegetation from 6 acres to 3 acres. Measures will be taken during the construction phase of the project to minimize impacts to all species by constructing the major improvements (clearing, culverts, ditching, and roadbed preparation) in the dormant season (October - February) for the species in question and not allowing vehicles or equipment out of the roadway footprint. Seeding of the ditch slopes and the A-3 (oil & chip) surface treatment may occur in the warmer months as required.

Attempts will be taken to mitigate any expected impacts of the road improvements on the listed species and the forest community as a whole through a combination of voluntary speed limit reductions, public education, planting of native grasses and forb species, continued management of the road corridor, and the creation of a shallow water wetland. These compensation measures should remedy any impact of the road for all groups of species as well as increase critical habitat for all groups except for the Western hognose and other snakes. IDNR has the authority to implement these proposed conservation measures under The "State Forest Act" 525 ILCS 40/9.

This project has been reviewed under IDNR's Comprehensive Environmental Review Process (CERP) which ensures compliance with all applicable federal and state regulations and has been given conditional approval based upon successful completion of the Incidental Take process and the approval of this Conservation Plan.

Public Education - A public education campaign will be conducted by posting "Break for Wildlife" signs identifying a recommended slower speed limit. The project contractor will provide all signs during construction.

Native Grass & Forbs Planting - The back-slopes of the ditches (approx. 1.8 acres) the area around the created wetland (approx. 1.4 acres) and the impacted area associated with the borrow pit will be planted with a low profile native seed/forbs mix that compliments the current vegetation of Sand Ridge State Forest and includes the native larval host as well as critical adult nectar plants for the butterfly species. This will create suitable habitat for the butterfly species. While this seems counter-intuitive, Ries *et al.*, (1999) have shown that while native vegetation increases the density of butterflies present, it actually reduces vehicular mortality since they tend to stay off the road and in the vegetation. The 1.8 acre back-slope seeding and the 0.25 acre wetland creation will compensate for the 1.2 acres of ditch fore-slope that will be planted to exotic grasses for mowing purposes. Mowing along the road corridor during the growing season will be restricted to the fore-slope of the ditch. The 1.4 acres of wetland seeding will compensate for the anticipated 1.4 acres of borrow area disturbance necessary for road construction.

Shallow Water Wetland Creation - A shallow water wetland (approximately 0.25 acres) will be created in Section 35, T22N, R7W. The creation of this wetland/native grass and forb planting will help benefit the butterfly species, the Illinois chorus frog, the Illinois mud turtle, potentially the Western hognose snake, as well as other wildlife species. The wetland, in conjunction with the native grass and forbs planting is compensation for the seeding of the ditch fore-slopes to exotic grasses for mowing purposes.

3. The parties to the conservation plan will ensure that adequate funding for the conservation plan will be provided:

This project is authorized by IDNR which receives funding from the Illinois General Assembly and the Federal Government in carrying out its programs. The projected cost of the preferred alternative for the project is $900,000. The cost of this project includes all monies necessary to implement the mitigation measures within the conservation plan. IDNR has provided funds for the pre-construction monitoring of the butterfly host plant survey (2004) as well as a general butterfly habitat survey to be conducted in the summer of 2005. The post construction monitoring will be accomplished by department personnel as part of their regular duties paid for through regular operating funds which are subject to appropriations. It is the intent of the IDNR to honor the conservation plan and it does not anticipate any changes or unforseen circumstances, but funds cannot be guaranteed because of the actions of the Illinois General Assembly.

4. Based on the best available scientific data, the Department has determined that the taking will not reduce the likelihood of the survival or recovery of the endangered species or threatened species in the wild in Illinois, the biotic community of which the species is a part, or the habitat essential to the species' existence in Illinois:

A. The project will not jeopardize, and is likely to enhance, the long term survival and recovery of the **Regal fritillary** since the species is a prolific and strong flier able to colonize new habitat. This project will result in the creation of 3.5 acres of additional habitat with suitable larval hosts while destroying only marginal habitat.

B. Since the **Ottoe skipper** is presumed extirpated from the forest, the project will not jeopardize, and is likely to enhance, the recovery of the **Ottoe skipper** in Illinois since the species is not very mobile and tends to disperse along the road corridor. This project will result in the creation of 3.5 acres of additional habitat with suitable larval hosts while destroying only marginal habitat.

C. Since the **Cobweb skipper** is presumed extirpated from the forest, the project will not jeopardize, and is likely to enhance, the recovery of the **Cobweb skipper** in Illinois. This project will result in the creation of 3.5 acres of additional habitat with suitable larval hosts while destroying only marginal habitat.

D. All data suggest that the **Illinois mud turtle** population has either been extirpated from the site or is so small and isolated as to not be a viable population. Therefore, the project will not jeopardize the survival or recovery of this species in the State, even if it results in individual mortalities.

E. Populations of **Illinois chorus frogs**, while present on the forest have not been recorded close enough to the impacted area to greatly affect the population. Dispersing chorus frogs routinely cross paved surfaces. Therefore any incidental taking will not jeopardize the survival or recovery of this species in Illinois.

F. The **Western hognose snake** has not been recorded from the forest, indicating it is so rare that it has not been previously encountered. The local population may be so small as to not be viable. While the probability of an incidental taking is greater than zero, it remains a very small risk. Very few snakes of this species may be taken, and probably none. The survival and recovery of this species in Illinois will not be jeopardized by this proposed action.

BACKGROUND INFORMATION:

A. Population levels of the listed butterflies, the Illinois mud turtle, the Illinois chorus frog, and the Western hognose snake within Sand Ridge State Forest are unknown. Estimates of vehicular mortality within those groups is either non-existent in the literature or are dependent on population density, habitat structure or other variables. Although, it is known that Regal fritillary's are susceptible to vehicular mortality (2 per day estimated, LaGesse *et al.*, 2004), this lack of information makes the estimation of potential impact due to this vector hard to quantify. The width of the sand road varies in spots but will correspond closely with the width of the improved road and only roughly 3 acres of existing vegetation will be destroyed in order to complete roadside ditches for this project. This acreage reflects only about 7/1000th of similar acreage on the forest. It is unlikely, though possible, that this habitat destruction will result in direct mortality to an Illinois mud turtle, Illinois chorus frog, or Western hognose snake which may be in the affected area. More probable, though still unlikely, is mortality to larval butterflies as host plants are destroyed.

No host plants (Johnny Jump-Up) for the Regal fritillary were found in the project area and based upon characteristics of the known emergence areas, it is likely that no larvae would be impacted. Vehicular mortality remains a threat to the population although unquantifiable at this point. Long term degradation caused by the road construction is harder to quantify but should be kept in check through added vigilance and management.

B. The resurfacing of this sand road has the potential to result in the incidental take of: the Regal fritillary, Ottoe skipper, Cobweb skipper, Illinois mud turtle, Illinois chorus frog, and the Western hognose snake. This take may occur through increased vehicle-caused mortality, direct construction-related mortality or through general degradation of the surrounding habitat and may occur within the breeding and/or non-breeding portions of the respective species life cycles.

C. Roads affect biodiversity negatively in seven (7) different ways: direct mortality from road construction, direct mortality from increased collisions with vehicles, modification of animal behavior, alteration of the physical environment, alteration of the chemical environment, spread of exotics, and increase use of the area by humans. Since Sand Ridge Road is currently an active corridor, some of the concerns such as spread of exotics and an increase of use in the area by humans are not major concern. However, alteration of the chemical and physical environment is likely to occur from construction and changes in road usage, with impacts such as: increase in soil density, changes in soil water content, surface water and runoff patterns, increase in temperature of the immediate surroundings, increased inputs of chemicals to the roadside environment of heavy metals, salts, organic molecules, and ozone.

Since the forest system is currently being impacted, to differing amounts, by all these physical and chemical alterations due to the current road, the impacts to species diversity from direct mortality and modification of animal behavior are the greatest concern from this surface improvement.

Since Sand Ridge Road West is unimproved, most mobile species do not see this as an impediment to movement. However, many species view paved roads as an obstacle. Paved roads have been shown to further habitat and population fragmentation, they restrict amphibian dispersal and are known to be functional barrier to other small-bodied ground dwelling animals such as small mammals, snails and butterflies. "Terrestrial salamanders are especially prone to extinction and recolonization processes which depend upon the maintenance of dispersal connections" (Gibbs, 1998). Paved surfaces selectively impede movements of many salamander species and have an average permeability factor of 0.3% for all salamanders. Roads have been shown to restrict gene flow in frogs. This perceived impediment to movement alters animal behavior by causing changes in home ranges and escape responses which affect overall reproductive success and physiological state. Population fragmentation causes stress as the population adjusts to the new situation. Findlay and Bourdages (2002), show that road improvement in proximity to wetlands have negative effects on plant and vertebrate populations that take decades to be fully evident due to a lagged response. Thus, the initial short term assessments substantially underestimate the real effects of the improvements.

The current condition of Sand Ridge Road (West) may limit vehicular collisions by restricting speed and traffic volume. Improvements to the road may therefore increase the incidence of vehicular collisions since direct mortality is related directly to speed and traffic volume. Vehicular collisions have been shown to affect population demographics: road kill is the third highest cause of mortality in deer and is documented as the limiting factor in the recovery of the endangered American Crocodile and a contributing factor to the endangerment of the prairie garter snake as well as significantly impacting terrestrial land turtles (box turtles) and large aquatic turtles. The improved surface to the road will effectively attract "basking" herps which will be drawn to the surface for heat conduction at critical times of the year and will thus be put at an increased risk.

The current "roadless" area in this portion of the forest is approximately 1,710.5 ha in size, while the road improvement project may result in two functionally separate roadless areas of approximately 921 ha and 789.5 ha in size for some species. This will ultimately create two (2) smaller populations for less mobile species where one large population may have existed in the past. Due to stochastic events which can affect the dynamics of smaller populations, one larger population is preferred over two smaller populations.

D. A traffic study was completed by IDOT - District 6, using IDNR's attendance counts completed from years 1993 to 2002. The attendance counts were estimated using a permanent traffic counting device in which counts were recorded on a monthly basis and number of vehicle multiplied by 3.5. The traffic count device was located across Sand Ridge Road West near the entrance to the site office/visitor center. The actual monthly counts from the traffic counter device was divided by the number of days in each month to determine the average daily traffic (ADT) on Sand Ridge Road West.

The critical months of traffic which may affect the endangered species is assumed to be from May 1st to October 1st of each year; therefore, only traffic data from these months was used and analyzed. There seems to be no steady increase in traffic counts from one year to the next over these recorded years, but the trend shows an anticipated increase of approximately 0.6% per year by grouping and averaging three year periods over this recorded time.

The proposed improvement to Sand Ridge Road West will not greatly increase traffic on this road, but make it more passable and safer for the existing users. We do anticipate a slight increase in traffic (4 vehicles per day, a 3.3% increase) directly after the improvements are completed. Local residents traveling between Goofy Ridge and Forest City may be more likely to use this road after being improved than other existing local roads that they are using now (especially during the times in the past when the existing sand road became impassable under certain weather conditions). The traffic increases on this road will cause decreases on other roads (where the same endangered species may exist).

After Sand Ridge Road West is improved, traffic is still anticipated to only be increased at approximately 0.6% per year (same as the current growth rate). The only way traffic could increase greatly on this road is if there happens to be some type of local development that would increase visitors to the site or provide additional local jobs to increase the population in the direct area. Reducing the speed limit to 20 mph is not anticipated to deter a significant amount of traffic from using this road.

While vehicle traffic may not increase dramatically on the road, the speed traveled by those vehicles may increase if not restrained. Therefore, a speed study was undertaken to determine the difference in speed between traffic on the unimproved sand road and the improved surface of Cactus Drive. Only seven (7) vehicles were recorded in 4 hours with 5 of the 7 being vehicles operated by the site. Due to the low traffic volume this study was ineffectual at differentiating speed differences between the two surface types. It is postulated and reasonable however that improvements to the road will result in higher vehicle velocity. Higher velocity is directly correlated with greater roadside mortality.

5. Any measures required under Section 5.5 of the Illinois Endangered Species Protection Act [520 ILCS 10/5.5 - 17 IL. Adm. Code Part 1080.40(b)], will be performed:

Additional measures are listed below under "Authorization." This authorization is, by definition, subject to those terms and conditions and official IDNR/OLM, ORC signature(s) on this authorization indicates their commitment to performing those measures.

6. The public has received notice of the application and has had the opportunity to comment before the Department made any decision regarding the application:

Public notice of request for authorization of incidental take of Regal fritillary (*Speyeria idalia*), Ottoe skipper (*Hesperia ottoe*), Cobweb skipper (*Hesperia metea*), Illinois mud turtle (*Kinosternon flavescens*), Illinois chorus frog (*Pseudacris streckeri*), and Western hognose snake (*Heterodon nasicus*) was published in the Edwardsville Intelligencer (Official State newspaper) and the Manito Review (Mason County) on March 15, March 22, and March 29, 2005. Public comments on IDNR/OLM's conservation plan were accepted by the Department until April 28, 2005. No comments were received by the public during the period of March 15 through April 28, 2005.

Authorization

It is the determination of the Department that the measures to be implemented by IDNR/OLM would adequately minimize and mitigate for the anticipated taking of a small number of listed animals due to construction improvements to Sand Ridge Road West in Mason County, Illinois. Further, it is our opinion that the take authorized herein would not diminish the likelihood of the survival of these animals in the wild within the State of Illinois, the biotic community of which the species is a part or the habitat essential to the species' existence in Illinois.

Pursuant to Section 5.5 of the Illinois Endangered Species Protection Act [520 ILCS 10/5.5 - 17 IL. Adm. Code Part 1080.40(b)], this authorization is issued subject to the following additional terms and conditions:

1. This authorization is effective upon signature by the Department and shall remain in effect for a period of 25 years after completion of the construction improvements to Sand Ridge Road West in Mason County, Illinois, unless terminated as pursuant to Section 5.5 of the Illinois Endangered Species Protection Act [520 ILCS 10/5.5 - 17 IL. Adm. Code Part 1080.80]. If applicable, this authorization shall be renewed indefinitely after the initial 25 year time period has passed. Renewal of this authorization shall be at the sole discretion of the IDNR-Office of Resource Conservation.

2. MONITORING MITIGATION & ADAPTIVE MANAGEMENT PRACTICES to be implemented: There is insufficient data to provide high levels of certainty regarding the magnitude(s) of incidental take associated with this project, however all are considered to be extremely low. The Department proposes to continue to monitor vehicle volume by keeping a traffic counter in the same location so numbers will be comparable with past counts and to ensure that traffic volume increases are in line with projections.

A more intense speed study will be conducted before and both immediately and one years post completion to monitor speed limit compliance. If the traffic volume and speed increases beyond reasonable expectations, the Department will respond by formally petitioning jurisdictional authorities to reduce the speed limit through the project area, then monitor results.

A. Butterflies

For the Regal Fritillary, Ottoe skipper, and Cobweb skipper, the study conducted during the 2004 season has identified that (1) the Ottoe skipper and the Cobweb skipper are presumed extirpated from the site, (2) potential host plants do occur in the project zone, (3) that suitable nectar plants also occur in the project zone, (4) that while the Regal fritillary butterflies utilize the areas, it is primarily for dispersal, and (5) that some mortality does occur through vehicular collisions. This data will be valuable in monitoring the impact of the road on these species.

The baseline data indicate that late summer nectar sources may be limiting and the project has been planned to provide additional acres of high-quality habitat for these species for this purpose, which , if utilized, should result in greater utilization of the forest by the Regal fritillary. In such a case, even a proportionate increase in mortality along the road should yield a net benefit, enhancing survival and recovery of this species.

The success of habitat planting will be assured under the terms of the contracts let for construction. Post-construction habitats will in no case be less in quantity or quality than pre-construction habitats.

Two years following construction, a vegetational survey will also confirm the success of nectar plants, affirm the continued use of habitats near the project unaffected by construction by the Regal fritillary. Mortality from road use will also be comparably measured and compared to the 2004 estimate. Data will be reported to the Endangered Species Program. This monitoring will be repeated in the fifth year following construction.

After either monitoring regime, should road mortality prove to increase precipitously, the Department will respond by formally petitioning jurisdictional authorities to reduce the speed limit through the project area, then monitor results.

After either monitoring regime, should the nectar plants not persist, the Department will investigate the reasons for non-establishment (fertility, disease, pesticides, excessive or inappropriate mowing, etc.), then attempt to re-establish plant populations after taking appropriate steps to address the problem. Reestablishment after 3 years will be at the expense of the Department.

B. Illinois Mud Turtle; Illinois Chorus Frog

As noted, the local population of the Illinois mud turtle may be extirpated, or nearly so. The Conservation Plan includes measures to provide additional habitat which may be beneficial to any individuals which remain. However, the risk to this species from the project is considered so slight the only monitoring proposed is routine observation and reporting of road kills, if any, by Site staff in conjunction with their normal duties. If a turtle road-kill cannot readily be identified as some other species, its location will be recorded, then it will be collected, preserved, and submitted to the District Restoration Ecologist or Wildlife Biologist for positive identification. Should a road-kill of the Illinois mud turtle be confirmed, the Department will petition jurisdictional road authorities for a reduction in the speed limit as indicated above, and renew its efforts to identify and describe the Sand Ridge population of this species.

The Conservation Plan includes measures to provide additional breeding habitat for the Illinois chorus frog. The Department will be alert for road-kills of this species prior to construction in an effort to quantify mortality under current conditions. The new habitat will be monitored during appropriate seasons for chorus frog reproduction and the results reported to the Endangered Species Program. Lack of use by the species will not be considered a failure or require adaptive management. Road-kills identified as Illinois chorus frogs, if any, will be tallied each season and compared to estimates of the local breeding population. If the level of road-kill appears to be unsustainable, the Department will petition jurisdictional road authorities for a reduction in the speed limit as indicated above.

C. Western Hognose Snake

This species has not been documented within the boundaries of the Sand Ridge State Forest. However, it has been reported from adjacent properties. Consequently, though its occurrence on the Forest is likely, population numbers and locations are unknown. Further, this range and habitat is shared by a closely related species, the Eastern hognose snake, *Heterodon platirhinos*, which cannot be readily distinguished from *Heterodon nasicus* without close examination of the individual. One distinguishing feature is that, for the Eastern hognose, the underside of the tail is always lighter than the belly, whereas for the Western hognose, the belly and underside of the tail are mostly black. There is some variation, however, and other characteristics must be examined for positive identification.

Monitoring for this species will consist of observations of snake road-kills by site staff throughout the forest and solicitation of sighting reports from Forest users. The locations of road-kills will be recorded, and the remains will be collected and provided to the Restoration Ecologist and/or Wildlife Biologist for positive identification. Positive identification will document the presence of the Western hognose within the forest and will provide useful information on the occurrence of other snakes in the Forest.

Should the level of snake road-kills within the project limit show a significant increase following construction, the Department will petition jurisdictional road authorities for a reduction in the speed limit as indicated above.

3. IDNR Regional, Site, and District Staff will be responsible for overseeing all monitoring, mitigation, and adaptive management efforts identified within the Conservation Plan. An IDNR Restoration Ecologist and/or Wildlife Biologist, or their designee, will be responsible for providing local seed/plugs for the vegetating of the pond. IDOT will be responsible for planning, contract execution and construction supervision for the entire project. The successful project contractor will be responsible for the execution of the contract and construction of the road as well as for implementing mitigation measures including informational signs, all materials and labor necessary for the construction of the shallow water wetland and the planting of the required warm season grass and forb mixture on the back-slope, around the pond and at the borrow pit under the supervision of IDOT District 6.

4. The effective period of this authorization may be altered by mutual agreement between all partners involved in this project: IDNR-Office of Resource Conservation, IDNR-Office of Land Management, and the Illinois Department of Transportation (IDOT).

5. This authorization may be revoked pursuant to Section 5.5 of the Illinois Endangered Species Protection Act [520 ILCS 10/5.5 - 17 IL. Adm. Code Part 1080.80] if the Department (ORC) finds that the IDNR/OLM and/or IDOT has failed to comply with any of these terms and conditions or has been responsible for the relocation of spike and black sandshell mussels beyond that which is incidental to construction improvements to Sand Ridge Road West in Mason County, Illinois.

6. The IDNR/OLM and IDNR/ORC Official(s) identified below is authorized to execute this agreement. Execution by IDNR/OLM and IDNR/ORC Official(s) indicates acceptance of all terms and conditions described in this agreement.

For the IDNR/Office of Resource Conservation

Mike Conlin

Mike Conlin, Acting Director
Office of Resource Conservation

5.19.05

Date Signed

For IDNR/Office of Land Management (OLM)

Signature

Scott Flood RLM

Please print name and official title

5/18/05

Date Signed